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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,858	05/27/2005	Luigi Resconi	FE 6071 (US)	4410
34872	7590	12/13/2007		
Basell USA Inc. Delaware Corporate Center II 2 Righter Parkway, Suite #300 Wilmington, DE 19803			EXAMINER LEE, RIP A	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 12/13/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/536,858	<b>Applicant(s)</b> RESCONI ET AL.	
	<b>Examiner</b> Rip A. Lee	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☒ Claim(s) 1,3,4,7 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-04-07; 10-11-07; 10-19-07</u> | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 § C.F.R. 1.114, filed on September 20, 2007. Claims 1-7 and 9 are pending. This office action is based on claims filed on September 25, 2006.

#### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7 and 9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of copending Application No. 10/536,857. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to substantially the same process of making polymers of butene. Note in the copending claim 7 that R6 and R7 may form a saturated or unsaturated 5- or 6-membered ring.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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### *Claim Objections*

3. Claims 1, 7, and 9 are objected to because of the following informalities: In line 8, the transition metal can not be a group 3 transition metal because  $p = 2$ . Appropriate corrections are required.
4. Claim 1 is objected to because of the following informalities: In line 12, please delete "or" which appears after "halogen atoms." Appropriate correction is required.
5. Claim 1 is objected to because of the following informalities: In lines 13 and 14 of the claim, the term "saturated or unsaturated" is superfluous and may be omitted. Appropriate correction is required.
6. Claim 1 is objected to because of the following informalities: In line 18, please replace "alkylarylidene and" with "alkylarylidene or." Appropriate correction is required.
7. Claim 1 is objected to because of the following informalities: On page 3, lines 1, 2, 6, and 13, the term "saturated or unsaturated" may be omitted. Appropriate corrections are required.
8. Claim 1 is objected to because of the following informalities: In line 9 of page 3, please replace "unsaturated" with "unsaturated." Appropriate correction is required.
9. Claims 3 and 4 are objected to because of the following informalities: The term "saturated or unsaturated" is superfluous and may be omitted. Appropriate corrections are required.
10. Claim 7 is objected to because of the following informalities: Please remove the term "saturated or unsaturated" in lines 3, 8, 16, and 17 of page 5. Appropriate corrections are required.

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11. Claim 7 is objected to because of the following informalities: On page 5, line 15, please delete "or" which appears after "halogen atoms." Appropriate correction is required.
12. Claim 7 is objected to because of the following informalities: On page 5, line 21, please replace "alkylarylidenes and" with "alkylarylidenes or." Appropriate correction is required.
13. Claim 9 is objected to because of the following informalities: Please remove the term "saturated or unsaturated" in lines 10, 15, and 19 of page 6 and lines 2, 3, 14, 15, and 17 of page 7. Appropriate corrections are required.
14. Claim 9 is objected to because of the following informalities: On page 7, line 1, please delete "or" which appears after "halogen atoms." Appropriate correction is required.
15. Claim 9 is objected to because of the following informalities: On page 7, line 7, please replace "alkylarylidenes and" with "alkylarylidenes or." Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Halterman *et al.* (*J. Organomet. Chem.*, 1998).

Compounds 18 and 19 of Halterman *et al.* correspond to indacenyl complexes of the instant claims where L is arylidene, M is Ti, and X is chlorine.

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18. Claim 7 and 9 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Halterman *et al.*

Halterman *et al.* does not show standard, ethylene (ethylidene) or dimethylsilylene bridged derivatives of the title metallocenes, however, in view of the general disclosure and exemplified structures of metallocenes 1 and 2, it would have been obvious to one having ordinary skill in the art to make the corresponding ethylidene and dimethylsilyl bridged *bis*(indacenyl) complexes. The skilled artisan would be motivated to make these compounds in order to make polymerization catalysts, and since corresponding metallocenes are known in the art to work in this capacity, one having ordinary skill in the art would have reasonably expected the modified metallocenes to work as polymerization catalyst.

#### ***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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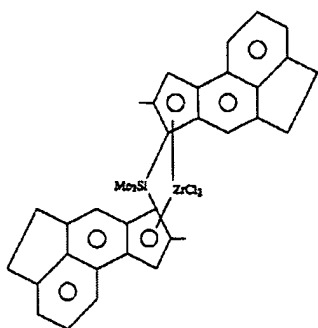
21. Claims 1-1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halterman *et al.* in view of Wilson *et al.* (4,971,936) and Rohrmann *et al.* (U.S. 5,455,366).

It is clear from the introduction of Halterman *et al.* that metallocenes are used for making catalysts for stereoregular polymerization of olefins, and one having skill in the art would have found it obvious to use metallocenes of the prior art for that purpose. The reference does not state that metallocenes should be used for polymerization of butene. At the time the invention was made, use of metal catalysts for making isotactic polybutene was well known. Wilson *et al.* shows that Ziegler-Natta catalysts are capable of catalyzing polymerization of butene, however, the polybutenes have a low degree of isotacticity (Table 4A). The combination of teachings would have suggested to one having ordinary skill in the art that metallocenes disclosed in Halterman *et al.* would be useful in preparing polybutene with a higher degree of isotacticity. The skilled artisan, having recognized a means to improve upon the limitations of the state of the art, would have found it obvious to use the metallocenes in Halterman *et al.* for making highly isotactic polybutene, and he would have expected such a process to work with more than reasonable expectation of success. The skilled artisan would turn to technology known in the art, such as that disclosed in Rohrmann *et al.* and find that active metallocene catalysts are prepared with an aluminoxane (MAO). Therefore, one having skill in the art would have found it obvious to prepare a catalyst using MAO. In summary, it would have been obvious to one having ordinary skill in the art to arrive at the process set forth in the instant claims. Since the combination of prior art elements according to known methods to yield a predictable result (formation of highly isotactic polybutene), the combination of teachings would have been well within the skill level of, and thus obvious to, one of ordinary skill in the art.

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22. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrmann *et al.* (U.S. 5,455,366).

Rohrmann *et al.* discloses the compound *rac*-Me<sub>2</sub>Si(2-Me- $\alpha$ -acenaphthindenyl)ZrCl<sub>2</sub> in example B (col. 15), reproduced below. The compound possesses the requisite 5,6-cyclotetramethylene group. Using Applicant's nomenclature, substituents R<sup>3</sup> and R<sup>7</sup> form a ring.



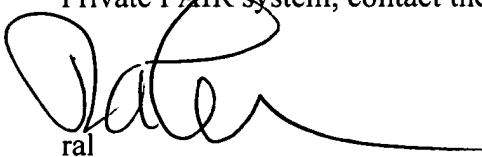
Catalysts prepared therefrom may be used for polymerization of olefins such as 1-butene (col. 12, lines 15-17). Although there is no working example showing such a process, it would have been obvious to one having ordinary skill in the art to use this compound to make a polybutene because the inventors disclose that all compounds are useful for preparing such polymers, and therefore, one having ordinary skill in the art one having ordinary skill in the art would have reasonably expected such an embodiment to work.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



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December 9, 2007